C-A OPERATIONS PROCEDURES MANUAL

4.94.3 V1 Line Access Security Gate Subsystem Check

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Hand Processed Changes

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Revision 01

Approved by: _____ _____
AGS Department Chairman Date

A. McGeary

4.94.3 V1 LINE ACCESS SECURITY GATE SUBSYSTEM CHECK

1. Purpose and Scope

This procedure provides directions for the test and validation of the hardware portion of the V1 Line gate subsystem of the RHIC Particle Accelerator Safety System (PASS).

2. Responsibilities

2.1 The RHIC or AGS Safety Systems Group Leader shall ensure that this procedure is executed, at no greater than six month intervals, or at such times as required by the Radiation Safety Committee (RSC).

2.2 The RHIC or AGS Safety Systems Group Leader shall review and initial the completed procedure checklist.

2.3 The RSC Chairman (or his designee) shall review the test results and determine when retesting is required after changes in hardware or software have been implemented..

2.4 Members of the RHIC or AGS Safety System Group shall, as designated, conduct and document this procedure.

2.5 The software engineers shall ensure the configuration control of the software tested.

3. Prerequisites

3.1 This procedure may only be executed by members of the AGS or RHIC Safety System Group.

3.2 This procedure requires two individuals trained in this procedure for proper execution.

3.3 A Restricted Access zero key, Controlled Access #3 key and sweep/reset #2 key.

3.4 Standard electrical toolbag.

3.5 Proper setup and calibration of the current source boards should have been done before executing this procedure.

3.6 Programs loaded Divisions A & B for Peer 3 and recorded in PASS Engineering Change Log Book.

3.7 Peer 3 enclosure RSC is RS LOTO by AGS Safety Systems Group Leader Engineers.
Peer 3 (Tag #) _____
Peer 3 (Tag #) _____
RS LOTO Development System Access Connector (Tag #) _____

3.8 Prior to the execution of this procedure, the beam line shall be placed in a safe off condition by performing RS LOTO. RS LOTO of Booster F6 and BTA DH2&3 or equivalent approval by chair RSC prior to execution of this procedure.
RS LOTO applied _____

3.9 Notify the Operations Coordinator (OC) or the Main Control Room (MCR) supervisor that the V1 Line gate system is being tested.

3.10 Post Notices in the MCR and at the V1GE1, V1GE2, and V1GE3 gates that the gate system is being tested.

4. Precautions

None

5. Procedure

This test will verify the following for both A and B divisions:

Door switch and crash glass switch
Strike solenoid and latch switch
Gate reset function and local indication
Sweep check station function and indication
Other indicator lamps at gate
MCR interface - AB Panelview 1400

5.1 From PASS Engineering Change Log Book, record software installed Peer 3, both divisions A & B.

Division A Compiler version _____

Division B Compiler version _____

Peer 3 Div. A Program version _____
Save date _____
Peer 3 Div. B Program version _____
Save date _____

5.2 V1GE1 Gate Door switch, Crash Glass and Latch Switch (C1028004).

5.2.1 Perform a physical inspection of the gate to confirm its proper mechanical operation, that the position sensing limit switches are properly aligned and the integrity of the wiring. Check for simple exit through the gate by means of the inside doorknob.
Switch alignment OK _____
Wiring OK _____
Exit by doorknob OK _____
Double doors locked prevent entry from outside _____

5.2.2 MCR Panelview 1400 should display door open/not reset status.
Panelview display OK _____

5.2.3 Panelview should indicate OPEN for crash glass switch or latch switch or door switch open. Check A division hardware first, then B division. Note that B division has no latch switch. Both doors shall be checked.
Any A division switch open indicates OPEN on Panelview _____
All A division switches closed indicates NOT RESET on Panelview_____
Any B division switch open indicates OPEN on Panelview _____
All B division switches closed indicates NOT RESET on Panelview_____

5.3 V1GE2 Gate Door switch, Crash Glass and Latch Switch (C1028005).

5.3.1 Perform a physical inspection of the gate to confirm its proper mechanical operation, that the position sensing limit switches are properly aligned and the integrity of the wiring. Check for simple exit through the gate by means of the inside doorknob.
Switch alignment OK _____
Wiring OK _____
Exit by doorknob OK _____
Door locked prevents entry from outside _____

5.3.2 MCR Panelview 1400 should display door open/not reset status.
Panelview display OK _____

5.3.3 Panelview should indicate OPEN for crash glass switch or latch switch or door switch open. Check A division hardware first, then B division. Note that B division has no latch switch.
Any A division switch open indicates OPEN on Panelview _____
All A division switches closed indicates NOT RESET on Panelview _____
Any B division switch open indicates OPEN on Panelview _____
All B division switches closed indicates NOT RESET on Panelview _____

5.4 V1GE3 Gate Door switch, Crash Glass and Latch Switch (C1028006).

5.4.1 Perform a physical inspection of the gate to confirm its proper mechanical operation, that the position sensing limit switches are properly aligned and the integrity of the wiring. Check for simple exit through the gate by means of the inside doorknob.
Switch alignment OK _____
Wiring OK _____
Exit by doorknob OK _____
Door locked prevents entry from outside _____

5.4.2 MCR Panelview 1400 should display door open/not reset status.
Panelview display OK _____

5.4.3 Panelview should indicate OPEN for crash glass switch or latch switch or door switch open. Check A division hardware first, then B division. Note that B division has no latch switch.
Any A division switch open indicates OPEN on Panelview _____
All A division switches closed indicates NOT RESET on Panelview _____
Any B division switch open indicates OPEN on Panelview _____
All B division switches closed indicates NOT RESET on Panelview _____

5.5 V1GE1 Electric Strike and Status Lamps (C1028004)

5.5.1 Use Panelview to select Peer3 SAFE STATE.
Check that CONTROLLED ENTRY lamp is lit _____
Check that #2 key with simultaneous release (S/R) will release electric strike but key or S/R alone will not _____
Simultaneous release should be audible at gate _____
Check that zero key is inoperative _____

5.5.2 Use Panelview to select Peer3 R/A.
Check that RESTRICTED ACCESS lamp is lit _____
Check that zero key will release electric strike _____
Check that #2 key is inoperative with or without S/R _____

5.5.3 Use Panelview to select Peer3 C/A.
Check that CONTROLLED ENTRY lamp is lit _____
Check that #2 key with simultaneous release will release electric strike but key or S/R alone will not_____
Simultaneous release should be audible at gate _____
Check that zero key is inoperative _____

5.6 V1GE2 Electric Strike and Status Lamps (C1028005)

5.6.1 Use Panelview to select Peer3 SAFE STATE.
Check that CONTROLLED ENTRY lamp is lit _____
Check that #2 key with simultaneous release (S/R) will release electric strike but key or S/R alone will not _____
Simultaneous release should be audible at gate _____
Check that zero key is inoperative _____

5.6.2 Use Panelview to select Peer3 R/A.
Check that RESTRICTED ACCESS lamp is lit _____
Check that zero key will release electric strike _____
Check that #2 key is inoperative with or without S/R _____

5.6.3 Use Panelview to select Peer3 C/A.
Check that CONTROLLED ENTRY lamp is lit _____
Check that #2 key with simultaneous release will release electric strike but key or S/R alone will not_____
Simultaneous release should be audible at gate _____
Check that zero key is inoperative _____

5.7 V1GE3 Electric Strike and Status Lamps (C1028006)

5.7.1 Use Panelview to select Peer3 SAFE STATE.
Check that CONTROLLED ENTRY lamp is lit _____
Check that #2 key with simultaneous release (S/R) will release electric strike but key or S/R alone will not _____
Simultaneous release should be audible at gate _____
Check that zero key is inoperative _____

5.7.2 Use Panelview to select Peer3 R/A.
Check that RESTRICTED ACCESS lamp is lit _____
Check that zero key will release electric strike _____
Check that #2 key is inoperative with or without S/R _____

5.7.3 Use Panelview to select Peer3 C/A.
Check that CONTROLLED ENTRY lamp is lit _____
Check that #2 key with simultaneous release will release electric strike but key or S/R alone will not_____
Simultaneous release should be audible at gate _____
Check that zero key is inoperative _____

5.8 V1GE1 Gate Reset Function (C1028004)

5.8.1 When #2 key is turned at either inside and outside control station and all switches are closed, gate should reset. Panelview should indicate GATE RESET.

5.8.2 GATE RESET lamps on inside and outside should light to indicate that V1GE1 gate is reset.
Reset lamp inside lights _____
Reset lamp outside lights _____
Panelview indicates V1GE1 GATE RESET _____

5.8.3 Check that Panelview indicates V1GE1 not reset when door is opened. Check indication for both divisions.
Panelview indicates gate not reset in A division for door open _____
Panelview indicates gate not reset in B division for door open _____

5.9 V1GE2 Gate Reset Function (C1028005)

5.9.1 When #2 key is turned at outside control station and all switches are closed, gate should reset. Panelview should indicate V1GE2 GATE RESET.

5.9.2 GATE RESET lamp outside should light to indicate that V1GE2 gate is reset.
Reset lamp outside lights _____
Panelview indicates V1GE2 GATE RESET _____

5.9.3 Check that Panelview indicates V1GE2 not reset when door is opened. Check indication for both divisions.
Panelview indicates gate not reset in A division for door open _____
Panelview indicates gate not reset in B division for door open _____

5.10 V1GE3 Gate Reset Function (C1028006)

5.10.1 When #2 key is turned at outside control station and all switches are closed, gate should reset. Panelview should indicate V1GE3 GATE RESET.

5.10.2 GATE RESET lamp outside should light to indicate that V1GE3 gate is reset.
Reset lamp outside lights _____
Panelview indicates V1GE3 GATE RESET _____

5.10.3 Check that Panelview indicates V1GE3 not reset when door is opened. Check indication for both divisions.

Panelview indicates gate not reset in A division for door open _____

Panelview indicates gate not reset in B division for door open _____

5.11 Sweep Check Station Function, CS1 through CS5, passage through gate while sweep is maintained, loss of sweep on R/A when door is opened, and loss of sweep for crash.

5.11.1 Use Panelview to select Peer3 R/A.

5.11.2 At CS1 just upstream of V1GE1 gate on left side of beam pipe, turn #2 key. Sweep lamp does not light _____

5.11.3 Use Panelview to select Peer3 C/A.

5.11.4 At CS1 just upstream of V1GE1 gate, turn #2 key. Sweep lamp flashes momentarily to indicate correct sweep sequence _____

5.11.5 At CS2 inside of V1GE2 gate on left side of beam pipe, turn #2 key. Sweep lamp flashes momentarily to indicate correct sweep sequence _____

5.11.6 At CS3 just inside V1GE2 gate, turn #2 key. Sweep lamp lights and stays on to indicate completion of sweep _____

5.11.7 Observe that Panelview 1400 indicates that the V1 area is swept _____

5.11.8 Exit area with S/R and observe sweep lamp remains on _____

5.11.9 Reenter area with S/R and observe sweep lamp remains on _____

5.11.10 Exit area without S/R and observe loss of sweep _____

5.11.11 Repeat steps 5.11.4 through 5.11.6 except skip CS2. AREA SWEPT lamp will not light and Panelview will indicate SWEEP NO GOOD. Panelview and lamps at gate do not light _____

5.11.12 Go back to CS2 and turn #2 key. Sweep lamp does not light _____

5.11.13 Re-sweep area, go to R/A and open gate. Sweep is lost when gate is opened on R/A _____

5.11.14 Exit and reset V1GE2 gate.

5.11.15 At CS4 inside V1GE3 gate (D6 Pit), turn #2 key.
Sweep lamp flashes momentarily to indicate correct sweep sequence _____

5.11.16 At CS5 just inside V1GE3 gate, turn #2 key.
Sweep lamp lights and stays on to indicate completion of sweep _____

5.11.17 Observe that Panelview 1400 indicates that the D6 area is swept _____

5.11.18 Exit area with S/R and observe sweep lamp remains on _____

5.11.19 Reenter area with S/R and observe sweep lamp remains on _____

5.11.20 Exit area without S/R and observe loss of sweep _____

5.11.21 Reestablish sweep and place area on R/A and open gate.
Sweep is lost when V1GE3 gate is opened on R/A _____

5.11.22 Resweep area on C/A and operate crash button; observe loss of sweep _____

5.12 Restore area to original configuration.

5.12.1 Notify MCR OC that the system test is complete.

5.12.2 Remove posted notices in MCR and at V1GE1, V1GE2, and V1GE3.

5.12.3 Remove LOTO of critical devices for this area.

5.13 The certification of the system is completed when the Safety System Group Leader and the RSC Chair approve the completed checkout sheets.

6. Documentation

Completed V1 Line Access Security Gate Subsystem Check (this procedure)

7. References

None

8. Attachments

None